Robert Nazaryan and Hayk Nazaryan

# Foundation Armenian Theory of Special Relativity In One Physical Dimension By Pictures

Yerevan - 2016

100 Years Inquisition In Science Is Now Over
Armenian Revolution In Science Has Begun!

2007

# Crash Course in Armenian Theory of Special Relativity

September, 2016 - Yerevan, Armenia

Robert Nazaryan and Hayk Nazaryan

# Foundation Armenian Theory of Special Relativity In One Physical Dimension by Pictures

Dedicated to the 25-th Anniversary of Independence of Armenia

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# Contents



*Our scientific and political articles can be found here.*
- https://yerevan.academia.edu/RobertNazaryan
- https://archive.org/details/@armenian_theory

*If you have the strong urge to accuse somebody for what you read here,*
*then don't accuse us, read the sentence to mathematics.*
*We are simply its messengers only.*

# Armenian Theory of Special Relativity Is a New and Solid Mathematical Theory, Because it Satisfies the Conditions to be Called a New Theory

1) Our created theory is new, because it was created between the years 2007-2012.
2) Our created theory does not contradict former legacy theories of physics.
3) The former legacy theory of relativity is a very special case of the Armenian Theory of Relativity (when coefficients are given the values $s = 0$ and $g = -1$) .
4) All formulas derived by Armenian Theory of Relativity, has a universal character because those are the exact mathematical representation of the Nature (*Philosophiae naturalis principia mathematica*).

# Chapter A

## The Most General Transformations Between Coordinate Systems And Initial State Condition

# The Most General Transformation Forms

- *Time-space coordinates transformations between two reference systems*

A_01

Direct transformations

$$\begin{cases} t' = t'(t,x,v) \\ x' = x'(t,x,v) \end{cases}$$

and

Inverse transformations

$$\begin{cases} t = t(t',x',v') \\ x = x(t',x',v') \end{cases}$$

*Where all $t'$, $x'$, $t$ and $x$ quantities are arbitrary functions.*

- *Initial state condition*

A_02

When $t = t' = t'' = \cdots = 0$

Then origins of all coordinate systems coincide each other on the one origin in $0$ point

# The Most General Transformation Equations For Time – Space Coordinates Differentials

- *Direct transformation equations*

$$\begin{cases} dt' = \dfrac{\partial t'}{\partial t}dt + \dfrac{\partial t'}{\partial x}dx + \dfrac{\partial t'}{\partial v}dv \\ dx' = \dfrac{\partial x'}{\partial t}dt + \dfrac{\partial x'}{\partial x}dx + \dfrac{\partial x'}{\partial v}dv \end{cases}$$

A_03

- *Inverse transformation equations*

$$\begin{cases} dt = \dfrac{\partial t}{\partial t'}dt' + \dfrac{\partial t}{\partial x'}dx' + \dfrac{\partial t}{\partial v'}dv' \\ dx = \dfrac{\partial x}{\partial t'}dt' + \dfrac{\partial x}{\partial x'}dx' + \dfrac{\partial x}{\partial v'}dv' \end{cases}$$

A_04

# Possible Two Cases Depending on Characters of the Observing Coordinate Systems

- *In the case of inertial observing coordinate systems (Case **A**)*

A_05

$$\begin{cases} v = \text{constant} \\ v' = \text{constant} \end{cases} \Rightarrow \begin{cases} dv = 0 \\ dv' = 0 \end{cases}$$

- *In the case of arbitrary observing coordinate systems (Case **B**)*

A_06

$$\begin{cases} v \neq \text{constant} \\ v' \neq \text{constant} \end{cases} \Rightarrow \begin{cases} dv \neq 0 \\ dv' \neq 0 \end{cases}$$

# Chapter B

## Examining the Case of Inertial Systems When Time – Space Coordinates are Homogenous but are Not Isotropic

# In the Case of Observing Inertial Systems We Have the Following Conditions and Transformations

- *Relative velocities are constant (Case **A**)*

B_01

$$\begin{cases} v = \text{constant} \\ v' = \text{constant} \end{cases} \Rightarrow \begin{cases} dv = 0 \\ dv' = 0 \end{cases}$$

- *Coordinates differentials transformations become*

B_02

$$\underline{\text{Direct transformation equations}} \qquad \underline{\text{Inverse transformation equations}}$$

$$\begin{cases} dt' = \dfrac{\partial t'}{\partial t}dt + \dfrac{\partial t'}{\partial x}dx \\ dx' = \dfrac{\partial x'}{\partial t}dt + \dfrac{\partial x'}{\partial x}dx \end{cases} \quad \text{and} \quad \begin{cases} dt = \dfrac{\partial t}{\partial t'}dt' + \dfrac{\partial t}{\partial x'}dx' \\ dx = \dfrac{\partial x}{\partial t'}dt' + \dfrac{\partial x}{\partial x'}dx' \end{cases}$$

# Making the Following Notations

- *In the case of direct transformations of the coordinates differentials*

Definition of beta coefficients

$$\begin{cases} \dfrac{\partial t'}{\partial t} = \beta_1(t,x,v) \\ \dfrac{\partial t'}{\partial x} = \beta_2(t,x,v) \end{cases}$$

and

Definition of gamma coefficients

$$\begin{cases} \dfrac{\partial x'}{\partial t} = \gamma_1(t,x,v) \\ \dfrac{\partial x'}{\partial x} = \gamma_2(t,x,v) \end{cases}$$

B_03

- *In the case of inverse transformations of the coordinates differentials*

Definition of beta coefficients

$$\begin{cases} \dfrac{\partial t}{\partial t'} = \beta'_1(t',x',v') \\ \dfrac{\partial t}{\partial x'} = \beta'_2(t',x',v') \end{cases}$$

and

Definition of gamma coefficients

$$\begin{cases} \dfrac{\partial x}{\partial t'} = \gamma'_1(t',x',v') \\ \dfrac{\partial x}{\partial x'} = \gamma'_2(t',x',v') \end{cases}$$

B_04

# Direct and Inverse Transformation Equations For Time - Space Coordinates Differentials

- *Coordinates differentials direct transformations expressed by new coefficients*

B_05

$$\begin{cases} dt' = \beta_1(t,x,v)dt + \beta_2(t,x,v)dx \\ dx' = \gamma_1(t,x,v)dt + \gamma_2(t,x,v)dx \end{cases}$$

- *Coordinates differentials Inverse transformations expressed by new coefficients*

B_06

$$\begin{cases} dt = \beta'_1(t',x',v')dt' + \beta'_2(t',x',v')dx' \\ dx = \gamma'_1(t',x',v')dt' + \gamma'_2(t',x',v')dx' \end{cases}$$

# In the Case of Homogenous Time – Space, Beta and Gamma Coefficients Need to Satisfy

- *In the case of the coordinates direct transformations*

Property of beta coefficients

$$\begin{cases} \beta_1(t,x,v) \equiv \beta_1(v) \\ \beta_2(t,x,v) \equiv \beta_2(v) \end{cases}$$

and

Property of gamma coefficients

$$\begin{cases} \gamma_1(t,x,v) \equiv \gamma_1(v) \\ \gamma_2(t,x,v) \equiv \gamma_2(v) \end{cases}$$

**B_07**

- *In the case of the coordinates inverse transformations*

Property of beta coefficients

$$\begin{cases} \beta'_1(t',x',v') \equiv \beta'_1(v') \\ \beta'_2(t',x',v') \equiv \beta'_2(v') \end{cases}$$

and

Property of gamma coefficients

$$\begin{cases} \gamma'_1(t',x',v') \equiv \gamma'_1(v') \\ \gamma'_2(t',x',v') \equiv \gamma'_2(v') \end{cases}$$

**B_08**

# In the Case of Homogenous Time – Space, Coordinates Differentials Transformations Between Two Inertial Systems Become

B_09

Direct transformation equations

$$\begin{cases} dt' = \beta_1(v)dt + \beta_2(v)dx \\ dx' = \gamma_1(v)dt + \gamma_2(v)dx \end{cases}$$

and

Inverse transformation equations

$$\begin{cases} dt = \beta'_1(v')dt' + \beta'_2(v')dx' \\ dx = \gamma'_1(v')dt' + \gamma'_2(v')dx' \end{cases}$$

**Reminder**

**Time - Space is only homogenous but not isotropic, therefore all derived formulas are asymmetric.
Beside that, in direct and inverse transformation equations unprimed and primed corresponding coefficients are different functions.**

# But in the Case of Homogeneous Time – Space, Transformations Can be Written Also Without Differentials

- *Transformation equations in natural order form*

Direct transformation equations

$$\begin{cases} t' = \beta_1(v)t + \beta_2(v)x \\ x' = \gamma_1(v)t + \gamma_2(v)x \end{cases}$$

and

Inverse transformation equations

$$\begin{cases} t = \beta_1'(v')t' + \beta_2'(v')x' \\ x = \gamma_1'(v')t' + \gamma_2'(v')x' \end{cases}$$

**B_10**

- *Transformation equations in legacy form*

Direct transformation equations

$$\begin{cases} t' = \beta_1(v)t + \beta_2(v)x \\ x' = \gamma_2(v)x + \gamma_1(v)t \end{cases}$$

and

Inverse transformation equations

$$\begin{cases} t = \beta_1'(v')t' + \beta_2'(v')x' \\ x = \gamma_2'(v')x' + \gamma_1'(v')t' \end{cases}$$

**B_11**

# Chapter C

## *Implementation of the Relativity Postulate*

# Special Theory of Relativity Postulates

- *Special theory of relativity postulates*

1. All fundamental physical laws have the same mathematical functional forms in all inertial systems.
2. There exists a universal constant velocity $c$, which has the same value in all inertial systems.
3. In all inertial systems time and space are homogeneous (Special Relativity).

C_01

- *Because of the relativity (first) postulate, corresponding coefficients of direct and inverse transformations must be the same mathematical functions*

Beta functions identity

$$\begin{cases} \beta_1'(\quad) \equiv \beta_1(\quad) \\ \beta_2'(\quad) \equiv \beta_2(\quad) \end{cases}$$

and

Gama functions identity

$$\begin{cases} \gamma_1'(\quad) \equiv \gamma_1(\quad) \\ \gamma_2'(\quad) \equiv \gamma_2(\quad) \end{cases}$$

C_02

# Implementation of the First Postulate in Transformation Equations

- *Transformation equations in legacy form*

C_03

Direct transformation equations and Inverse transformation equations

$$\begin{cases} t' = \beta_1(v)t + \beta_2(v)x \\ x' = \gamma_2(v)x + \gamma_1(v)t \end{cases} \quad \text{and} \quad \begin{cases} t = \beta_1(v')t' + \beta_2(v')x' \\ x = \gamma_2(v')x' + \gamma_1(v')t' \end{cases}$$

- *Transformation equations in natural order form*

C_04

Direct transformation equations and Inverse transformation equations

$$\begin{cases} t' = \beta_1(v)t + \beta_2(v)x \\ x' = \gamma_1(v)t + \gamma_2(v)x \end{cases} \quad \text{and} \quad \begin{cases} t = \beta_1(v')t' + \beta_2(v')x' \\ x = \gamma_1(v')t' + \gamma_2(v')x' \end{cases}$$

# Measurements of the Beta and Gamma Coefficients

- *Coefficients which don't have measurements*

$$\begin{cases} \beta_1 & \Rightarrow \quad \text{don't have measurement} \\ \gamma_2 & \Rightarrow \quad \text{don't have measurement} \end{cases}$$

C_05

- *Coefficients which have measurements*

$$\begin{cases} \beta_2 & \Rightarrow \quad \text{have inverse measurement of velocity } \left(\frac{1}{c}\right) \\ \gamma_1 & \Rightarrow \quad \text{have measurement of velocity } (c) \end{cases}$$

C_06

# Chapter D

## *Reciprocal Solution Methods for the Systems of Transformation Equations*

# Coordinates Transformation Equations In the Form System of Linear Equations

- *System of transformation equations in legacy form*

Direct transformation equations

$$\begin{cases} \beta_1(v)t + \beta_2(v)x = t' \\ \gamma_2(v)x + \gamma_1(v)t = x' \end{cases}$$

and

Inverse transformation equations

$$\begin{cases} \beta_1(v')t' + \beta_2(v')x' = t \\ \gamma_2(v')x' + \gamma_1(v')t' = x \end{cases}$$

**D_01**

- *System of transformation equations in natural order form*

Direct transformation equations

$$\begin{cases} \beta_1(v)t + \beta_2(v)x = t' \\ \gamma_1(v)t + \gamma_2(v)x = x' \end{cases}$$

and

Inverse transformation equations

$$\begin{cases} \beta_1(v')t' + \beta_2(v')x' = t \\ \gamma_1(v')t' + \gamma_2(v')x' = x \end{cases}$$

**D_02**

# Determinants of the Systems of Transformation Equations

- *Notations for determinants of the systems of transformation equations*

D_03

$$\begin{cases} D(v) = \begin{vmatrix} \beta_1(v) & \beta_2(v) \\ \gamma_1(v) & \gamma_2(v) \end{vmatrix} \\ D(v') = \begin{vmatrix} \beta_1(v') & \beta_2(v') \\ \gamma_1(v') & \gamma_2(v') \end{vmatrix} \end{cases}$$

- *The determinants formulas of the systems of transformation equations*

D_04

$$\begin{cases} D(v) = \beta_1(v)\gamma_2(v) - \beta_2(v)\gamma_1(v) \neq 0 \\ D(v') = \beta_1(v')\gamma_2(v') - \beta_2(v')\gamma_1(v') \neq 0 \end{cases}$$

# The Solutions of the Systems of Transformation Equations

- *For coordinates of the* $K$ *observing system, we get solutions*

$$t = \frac{1}{D(v)}\begin{vmatrix} t' & \beta_2(v) \\ x' & \gamma_2(v) \end{vmatrix} \quad \text{and} \quad x = \frac{1}{D(v)}\begin{vmatrix} \beta_1(v) & t' \\ \gamma_1(v) & x' \end{vmatrix}$$

D_05

- *For coordinates of the* $K'$ *observing system, we get solutions*

$$t' = \frac{1}{D(v')}\begin{vmatrix} t & \beta_2(v') \\ x & \gamma_2(v') \end{vmatrix} \quad \text{and} \quad x' = \frac{1}{D(v')}\begin{vmatrix} \beta_1(v') & t \\ \gamma_1(v') & x \end{vmatrix}$$

D_06

# Comparison of the New and Original Transformation Equations

- *New received forms of the transformation equations*

**D_07**

Direct transformation equations

$$\begin{cases} t' = \dfrac{\gamma_2(v')}{D(v')}t - \dfrac{\beta_2(v')}{D(v')}x \\ x' = \dfrac{\beta_1(v')}{D(v')}x - \dfrac{\gamma_1(v')}{D(v')}t \end{cases}$$

and

Inverse transformation equations

$$\begin{cases} t = \dfrac{\gamma_2(v)}{D(v)}t' - \dfrac{\beta_2(v)}{D(v)}x' \\ x = \dfrac{\beta_1(v)}{D(v)}x' - \dfrac{\gamma_1(v)}{D(v)}t' \end{cases}$$

- *Original transformation equations in the legacy form*

**D_08**

Direct transformation equations

$$\begin{cases} t' = \beta_1(v)t + \beta_2(v)x \\ x' = \gamma_2(v)x + \gamma_1(v)t \end{cases}$$

and

Inverse transformation equations

$$\begin{cases} t = \beta_1(v')t' + \beta_2(v')x' \\ x = \gamma_2(v')x' + \gamma_1(v')t' \end{cases}$$

# Relations Between Coefficients

- *From comparison of the direct transformation equations, we get the relations*

$$\begin{cases} \beta_1(v) = +\dfrac{\gamma_2(v')}{D(v')} \\ \beta_2(v) = -\dfrac{\beta_2(v')}{D(v')} \end{cases} \quad \text{and} \quad \begin{cases} \gamma_2(v) = +\dfrac{\beta_1(v')}{D(v')} \\ \gamma_1(v) = -\dfrac{\gamma_1(v')}{D(v')} \end{cases}$$

D_09

- *From comparison of the inverse transformation equations, we get the relations*

$$\begin{cases} \beta_1(v') = +\dfrac{\gamma_2(v)}{D(v)} \\ \beta_2(v') = -\dfrac{\beta_2(v)}{D(v)} \end{cases} \quad \text{and} \quad \begin{cases} \gamma_2(v') = +\dfrac{\beta_1(v)}{D(v)} \\ \gamma_1(v') = -\dfrac{\gamma_1(v)}{D(v)} \end{cases}$$

D_10

# Grouping of the Important Relations

- *Two important relations*

D_11

$$\begin{cases} D(v)D(v') &= 1 \\ \beta_1(v)\beta_1(v') &= \gamma_2(v)\gamma_2(v') \end{cases}$$

- *First Invariant relation, which we denote as* $\zeta_1$

D_12

$$\frac{\beta_2(v)}{\gamma_1(v)} = \frac{\beta_2(v')}{\gamma_1(v')} = \zeta_1$$

# Chapter E

## *Definition of the Coefficient* $g$

# Examining First Invariant Relation

- *Coefficient* $\zeta_1$ *must have the following functional arguments*

E_01

$$\begin{cases} \dfrac{\beta_2(v)}{\gamma_1(v)} = \zeta_1(v) \\ \dfrac{\beta_2(v')}{\gamma_1(v')} = \zeta_1(v') \end{cases}$$

- *Therefore, the coefficient* $\zeta_1$ *must satisfy the following functional equation*

E_02

$$\zeta_1(v) = \zeta_1(v')$$

# Finding the Most General Solution for Functional Equation

- *First possible solution, which is not the general solution*

If $\quad |v'| = |v| \quad \Rightarrow \quad$ then $\zeta_1$ is an arbitrary even function

E_03

- *Second possible solution, which is the most general solution*

If $\quad |v'| \neq |v| \quad \Rightarrow \quad$ then $\zeta_1$ is constant quantity

E_04

# Examining the Most General Solution

- $\zeta_1$ *function must be a constant quantity*

E_05

$$\zeta_1(v) = \zeta_1(v') = \zeta_1 = \text{constant}$$

- *Therefore, beta and gamma coefficients relations are constant*

E_06

$$\frac{\beta_2(v)}{\gamma_1(v)} = \frac{\beta_2(v')}{\gamma_1(v')} = \zeta_1 = \text{constant}$$

# Definition of the Coefficient $g$

- *From the measurements of the beta and gamma coefficients, we get for* $\zeta_1$

$$\boxed{\zeta_1 = -g\frac{1}{c^2} = \text{constant}}$$

E_07

- *Therefore, for the beta coefficients we obtain*

$$\boxed{\begin{cases} \beta_2(v) = -g\frac{1}{c^2}\gamma_1(v) \\ \beta_2(v') = -g\frac{1}{c^2}\gamma_1(v') \end{cases}}$$

E_08

# Time – Space Coordinates Transformation Equations and Transformations Discriminant Formulas

- *Time - space coordinates direct and inverse transformation equations*

E_09

Direct transformation equations

$$\begin{cases} t' = \beta_1(v)t - g\frac{1}{c^2}\gamma_1(v)x \\ x' = \gamma_2(v)x + \gamma_1(v)t \end{cases}$$

and

Inverse transformation equations

$$\begin{cases} t = \beta_1(v')t' - g\frac{1}{c^2}\gamma_1(v')x' \\ x = \gamma_2(v')x' + \gamma_1(v')t' \end{cases}$$

- *Transformations discriminant formulas*

E_10

$$\begin{cases} D(v) = \beta_1(v)\gamma_2(v) + g\frac{1}{c^2}[\gamma_1(v)]^2 \neq 0 \\ D(v') = \beta_1(v')\gamma_2(v') + g\frac{1}{c^2}[\gamma_1(v')]^2 \neq 0 \end{cases}$$

# Chapter F

## *Examining Origins Movement Of the Observing Inertial Systems*

# Making Two Abstract – Theoretical Experiments

- *Above mentioned abstract - theoretical experiments conditions*

F_01

For origin of $K'$ and For origin of $K$

$$\begin{cases} x' = 0 \\ x = vt \end{cases} \quad \text{and} \quad \begin{cases} x = 0 \\ x' = v't' \end{cases}$$

- *Conditions (F_01) we need to use in the following transformation equations*

F_02

Direct transformation equations and Inverse transformation equations

$$\begin{cases} t' = \beta_1(v)t - g\frac{1}{c^2}\gamma_1(v)x \\ x' = \gamma_2(v)x + \gamma_1(v)t \end{cases} \quad \text{and} \quad \begin{cases} t = \beta_1(v')t' - g\frac{1}{c^2}\gamma_1(v')x' \\ x = \gamma_2(v')x' + \gamma_1(v')t' \end{cases}$$

# First Abstract – Theoretical Experiment

- *The condition of the first abstract - theoretical experiment*

$$\begin{cases} x' &= 0 \\ x &= vt \end{cases}$$

F_03

- *Above condition used on transformation equations (F_02)*

From direct transformation equations

$$\begin{cases} t' &= \left[\beta_1(v) - g\frac{v}{c^2}\gamma_1(v)\right]t \\ 0 &= \left[\gamma_2(v)v + \gamma_1(v)\right]t \end{cases}$$

and

From inverse transformation equations

$$\begin{cases} t &= \beta_1(v')t' \\ vt &= \gamma_1(v')t' \end{cases}$$

F_04

# Results of the First Experiment

- *The first abstract - theoretical experiment's important formulas*

F_05

$$\begin{cases} \gamma_1(v) = -\gamma_2(v)v \\ v = \dfrac{\gamma_1(v')}{\beta_1(v')} \end{cases}$$

- *The first abstract - theoretical experiment's beta coefficient formula*

F_06

$$\beta_1(v') = \frac{1}{\beta_1(v) - g\frac{v}{c^2}\gamma_1(v)}$$

# Second Abstract – Theoretical Experiment

- *The condition of the second abstract - theoretical experiment*

$$\begin{cases} x = 0 \\ x' = v't' \end{cases}$$

F_07

- *Above condition used on transformation equations (F_02)*

From direct transformation equations

$$\begin{cases} t' = \beta_1(v)t \\ v't' = \gamma_1(v)t \end{cases}$$

and

From inverse transformation equations

$$\begin{cases} t = \left[\beta_1(v') - g\frac{v'}{c^2}\gamma_1(v')\right]t' \\ 0 = [\gamma_2(v')v' + \gamma_1(v')]t' \end{cases}$$

F_08

# Results of the Second Experiment

- *The second abstract - theoretical experiment's important formulas*

F_09

$$\begin{cases} \gamma_1(v') = -\gamma_2(v')v' \\ v' = \dfrac{\gamma_1(v)}{\beta_1(v)} \end{cases}$$

- *The second abstract - theoretical experiment's beta coefficient formula*

F_10

$$\beta_1(v) = \frac{1}{\beta_1(v') - g\dfrac{v'}{c^2}\gamma_1(v')}$$

# Two Experiments Results Written Together

- *First group of coefficients relations*

$$\begin{cases} \gamma_1(v) = -\gamma_2(v)v \\ \gamma_1(v') = -\gamma_2(v')v' \end{cases} \Rightarrow \begin{cases} \beta_2(v) = g\frac{v}{c^2}\gamma_2(v) \\ \beta_2(v') = g\frac{v'}{c^2}\gamma_2(v') \end{cases}$$

F_11

- *Second group of coefficients relations*

$$\begin{cases} \beta_1(v') = \dfrac{1}{\beta_1(v) + g\frac{v^2}{c^2}\gamma_2(v)} \\ \beta_1(v) = \dfrac{1}{\beta_1(v') + g\frac{v'^2}{c^2}\gamma_2(v')} \end{cases}$$

F_12

# Relations Between Relative Velocities

- *Relations between inverse and direct relative velocities*

F_13

$$\begin{cases} v' = \dfrac{\gamma_1(v)}{\beta_1(v)} \\ v = \dfrac{\gamma_1(v')}{\beta_1(v')} \end{cases} \Rightarrow \begin{cases} v' = -\dfrac{\gamma_2(v)}{\beta_1(v)} v \\ v = -\dfrac{\gamma_2(v')}{\beta_1(v')} v' \end{cases}$$

- *Relative velocity satisfy the property*

F_14

$$(v')' = -\frac{\gamma_2(v')}{\beta_1(v')} v' = v \quad \Rightarrow \quad (v')' \equiv v$$

# Transformations Discriminants Formulas

- *First group of discriminants formulas*

$$\begin{cases} D(v) = \gamma_2(v)\left[\beta_1(v) + g\frac{v^2}{c^2}\gamma_2(v)\right] \neq 0 \\ D(v') = \gamma_2(v')\left[\beta_1(v') + g\frac{v'^2}{c^2}\gamma_2(v')\right] \neq 0 \end{cases}$$

F_15

- *Second group of discriminants formulas*

$$\begin{cases} D(v) = \beta_1(v)\gamma_2(v)\left(1 - g\frac{vv'}{c^2}\right) \neq 0 \\ D(v') = \beta_1(v')\gamma_2(v')\left(1 - g\frac{vv'}{c^2}\right) \neq 0 \end{cases}$$

F_16

# Direct and Inverse Transformation Equations

- *First form of transformation equations*

**F_17**

Direct transformation equations

$$\begin{cases} t' = \beta_1(v)t + g\frac{v}{c^2}\gamma_2(v)x \\ x' = \gamma_2(v)(x - vt) \end{cases}$$

and

Inverse transformation equations

$$\begin{cases} t = \beta_1(v')t' + g\frac{v'}{c^2}\gamma_2(v')x' \\ x = \gamma_2(v')(x' - v't') \end{cases}$$

- *Second form of transformation equations*

**F_18**

Direct transformation equations

$$\begin{cases} t' = \beta_1(v)\left(t - g\frac{v'}{c^2}x\right) \\ x' = \gamma_2(v)(x - vt) \end{cases}$$

and

Inverse transformation equations

$$\begin{cases} t = \beta_1(v')\left(t' - g\frac{v}{c^2}x'\right) \\ x = \gamma_2(v')(x' - v't') \end{cases}$$

# Chapter G

## Definition of the Coefficient $S$

For simplicity purposes we will use the beta and gamma coefficients without index.

$$\begin{cases} \beta_1(\quad) \Rightarrow \beta(\quad) \\ \gamma_2(\quad) \Rightarrow \gamma(\quad) \end{cases}$$

# We Need to Use the Following Previous Results

- *From (D_09) and (D_10) we have the following relations between coefficients*

G_01

$$\begin{cases} \beta(v) = +\dfrac{\gamma(v')}{D(v')} \\ \gamma(v) = +\dfrac{\beta(v')}{D(v')} \end{cases} \quad \text{and} \quad \begin{cases} \beta(v') = +\dfrac{\gamma(v)}{D(v)} \\ \gamma(v') = +\dfrac{\beta(v)}{D(v)} \end{cases}$$

- *From (F_13) we have the following relations between relative velocities*

G_02

$$\begin{cases} v' = -\dfrac{\gamma(v)}{\beta(v)} v \\ v = -\dfrac{\gamma(v')}{\beta(v')} v' \end{cases}$$

# Second Invariant Relation

- *From (G_01) and (G_02) we get second invariant relation, which we denote as* $\zeta_2$

$$\frac{\beta(v') - \gamma(v')}{\gamma(v')v'} = \frac{\beta(v) - \gamma(v)}{\gamma(v)v} = \zeta_2 \tag{G_03}$$

- *The most general solution of the functional equation is when* $\zeta_2$ *becomes a constant*

$$\zeta_2(v') = \zeta_2(v) = \zeta_2 = \text{constant} \tag{G_04}$$

# Definition of the Coefficient $s$

- *From the measurements of beta and gamma coefficients, we get for* $\zeta_2$

G_05

$$\boxed{\zeta_2 = s\frac{1}{c} = \text{constant}}$$

- *Therefore, we can write the second invariant relation with a new coefficient* $s$

G_06

$$\boxed{\frac{\beta(v') - \gamma(v')}{\gamma(v')v'} = \frac{\beta(v) - \gamma(v)}{\gamma(v)v} = s\frac{1}{c}}$$

# Formulas for Beta Coefficients

$$\begin{cases} \beta(v) &= \gamma(v)\left(1 + s\frac{v}{c}\right) \\ \beta(v') &= \gamma(v')\left(1 + s\frac{v'}{c}\right) \end{cases}$$

G_07

From this point on, all transformation equations and other important relativistic formulas we will name "Armenian". This is the best way to distinguish between the legacy and the new theory of relativity and their corresponding relativistic formulas.
Also, this research is the accumulation of practically 50 years of obsessive thinking about the natural laws of the universe. It was done in Armenia by an Armenian and the original manuscripts were written in Armenian. This research is purely from the mind of an Armenian and from the land of Armenia, therefore we can call it by its rightful name.

# Formulas of the Armenian Theory of Relativity

- *Armenian relation formulas between relative velocities*

G_08

$$\begin{cases} v' = -\dfrac{v}{1+s\dfrac{v}{c}} \\ v = -\dfrac{v'}{1+s\dfrac{v'}{c}} \end{cases} \Rightarrow \left(1+s\frac{v}{c}\right)\left(1+s\frac{v'}{c}\right) = 1$$

- *Armenian direct and inverse transformation equations*

G_09

Armenian direct transformation equations

$$\begin{cases} t' = \gamma(v)\left[\left(1+s\dfrac{v}{c}\right)t + g\dfrac{v}{c^2}x\right] \\ x' = \gamma(v)(x - vt) \end{cases}$$

և

Armenian inverse transformation equations

$$\begin{cases} t = \gamma(v')\left[\left(1+s\dfrac{v'}{c}\right)t' + g\dfrac{v'}{c^2}x'\right] \\ x = \gamma(v')(x' - v't') \end{cases}$$

# Chapter H

## *Derivation of the Armenian Gamma Functions*

# Armenian Invariant Interval Between Two Events

- *Armenian transformation equations in the same measurement coordinates*

H_01

Armenian direct transformation equations

$$\begin{cases} ct' = \gamma(v)\left[\left(1+s\frac{v}{c}\right)ct + g\frac{v}{c}x\right] \\ x' = \gamma(v)\left(x - \frac{v}{c}ct\right) \end{cases}$$

and

Armenian inverse transformation equations

$$\begin{cases} ct = \gamma(v')\left[\left(1+s\frac{v'}{c}\right)ct' + g\frac{v'}{c}x'\right] \\ x = \gamma(v')\left(x' - \frac{v'}{c}ct'\right) \end{cases}$$

- *Quadratic form of the Armenian invariant interval*

H_02

$$\text{Ե}^2 = (ct')^2 + s(ct')x' + gx'^2 = (ct)^2 + s(ct)x + gx^2$$

# Reciprocal Calculation of the Armenian Interval

- *Reciprocal substitution coordinates into Armenian interval formulas (H_02)*

$$\begin{cases} \text{Ե}^2 = [\gamma(v)]^2\left(1 + s\dfrac{v}{c} + g\dfrac{v^2}{c^2}\right)[(ct)^2 + s(ct)x + gx^2] \\ \text{Ե}^2 = [\gamma(v')]^2\left(1 + s\dfrac{v'}{c} + g\dfrac{v'^2}{c^2}\right)[(ct')^2 + s(ct')x' + g(x')^2] \end{cases} \quad \text{H\_03}$$

- *Above Armenian interval expressions must be equal original interval formulas*

$$\begin{cases} \text{Ե}^2 = (ct)^2 + s(ct)x + gx^2 \\ \text{Ե}^2 = (ct')^2 + s(ct')x' + g(x')^2 \end{cases} \quad \text{H\_04}$$

# Equating Two Different Interval Expressions

- *Gamma function of the Armenian direct transformation*

H_05

$$\boxed{\gamma_{\text{չ}}(v) = \frac{1}{\sqrt{1 + s\dfrac{v}{c} + g\dfrac{v^2}{c^2}}}}$$

- *Gamma function of the Armenian inverse transformation*

H_06

$$\boxed{\gamma_{\text{չ}}(v') = \frac{1}{\sqrt{1 + s\dfrac{v'}{c} + g\dfrac{v'^2}{c^2}}}}$$

# First Group of Important Relations

- *Armenian transformation equations discriminants values*

$$\begin{cases} D(v) = [\gamma_{\text{չ}}(v)]^2 \left(1 + s\dfrac{v}{c} + g\dfrac{v^2}{c^2}\right) = 1 \\ D(v') = [\gamma_{\text{չ}}(v')]^2 \left(1 + s\dfrac{v'}{c} + g\dfrac{v'^2}{c^2}\right) = 1 \end{cases}$$

H_07

- *Armenian gamma functions first group of important relations*

$$\begin{cases} \gamma_{\text{չ}}(v') = \gamma_{\text{չ}}(v)\left(1 + s\dfrac{v}{c}\right) \\ \gamma_{\text{չ}}(v) = \gamma_{\text{չ}}(v')\left(1 + s\dfrac{v'}{c}\right) \\ \gamma_{\text{չ}}(v')v' = -\gamma_{\text{չ}}(v)v \end{cases}$$

H_08

# Second Group of Important Relations

- *This important relation between Armenian gamma functions we use in the future for the Armenian energy formulas*

H_09

$$\boxed{\gamma_{\zeta}(v')\left(1+\tfrac{1}{2}s\frac{v'}{c}\right) \;=\; \gamma_{\zeta}(v)\left(1+\tfrac{1}{2}s\frac{v}{c}\right)}$$

- *This important relation between Armenian gamma functions we use in the future for the Armenian momentum formulas*

H_10

$$\boxed{\gamma_{\zeta}(v')\left(\tfrac{1}{2}s+g\frac{v'}{c}\right) \;+\; \gamma_{\zeta}(v)\left(\tfrac{1}{2}s+g\frac{v}{c}\right) \;=\; s\left[\gamma_{\zeta}(v)\left(1+\tfrac{1}{2}s\frac{v}{c}\right)\right]}$$

# Chapter I

## Velocity and Acceleration Formulas Of the Observed Test Particle

# Notations for the Test Particle Velocities and Accelerations

- *Notation for the moving test particle velocities*

I_01

$$\begin{cases} u = \dfrac{dx}{dt} \\ u' = \dfrac{dx'}{dt'} \end{cases}$$

- *Notation for the moving test particle accelerations*

I_02

$$\begin{cases} b = \dfrac{du}{dt} = \dfrac{d^2x}{dt^2} \\ b' = \dfrac{du'}{dt'} = \dfrac{d^2x'}{dt'^2} \end{cases}$$

# Time Derivatives of the Armenian Transformation Equations

- *Time derivatives of the Armenian direct transformation equations*

$$\begin{cases} \dfrac{dt'}{dt} = \gamma_{\text{ք}}(v)\left(1 + s\dfrac{v}{c} + g\dfrac{vu}{c^2}\right) \\ \dfrac{dx'}{dt} = \gamma_{\text{ք}}(v)(u - v) \end{cases}$$

I_03

- *Time derivatives of the Armenian inverse transformation equations*

$$\begin{cases} \dfrac{dt}{dt'} = \gamma_{\text{ք}}(v')\left(1 + s\dfrac{v'}{c} + g\dfrac{v'u'}{c^2}\right) \\ \dfrac{dx}{dt'} = \gamma_{\text{ք}}(v')(u' - v') \end{cases}$$

I_04

# Relations of the Time Differentials

- *First form of relations of the time differentials*

I_05

$$\begin{cases} \dfrac{dt'}{dt} = \gamma_{\zeta}(v)\left(1 + s\dfrac{v}{c} + g\dfrac{vu}{c^2}\right) \\[2ex] \dfrac{dt}{dt'} = \gamma_{\zeta}(v')\left(1 + s\dfrac{v'}{c} + g\dfrac{v'u'}{c^2}\right) \end{cases}$$

- *Second form of relations of the time differentials*

I_06

$$\begin{cases} \dfrac{dt'}{dt} = \gamma_{\zeta}(v')\left(1 - g\dfrac{v'u}{c^2}\right) \\[2ex] \dfrac{dt}{dt'} = \gamma_{\zeta}(v)\left(1 - g\dfrac{vu'}{c^2}\right) \end{cases}$$

# Moving Test Particle Velocity Formulas

- *Test particle velocity with respect to the inertial system* $K'$

$$\frac{dx'}{dt'} = u' = \frac{u - v}{1 + s\frac{v}{c} + g\frac{vu}{c^2}}$$

I_07

- *Test particle velocity with respect to the inertial system* $K$

$$\frac{dx}{dt} = u = \frac{u' - v'}{1 + s\frac{v'}{c} + g\frac{v'u'}{c^2}}$$

I_08

# Armenian Addition and Subtraction Formulas for Velocities

- *Armenian addition and subtraction formulas, expressed by direct relative velocity*

I_09

$$\begin{cases} u = u' \oplus v = \dfrac{\left(1 + s\dfrac{v}{c}\right)u' + v}{1 - g\dfrac{vu'}{c^2}} \\[2ex] u' = u \ominus v = \dfrac{u - v}{1 + s\dfrac{v}{c} + g\dfrac{vu}{c^2}} \end{cases}$$

- *Armenian addition and subtraction formulas, expressed by inverse relative velocity*

I_10

$$\begin{cases} u' = u \oplus v' = \dfrac{\left(1 + s\dfrac{v'}{c}\right)u + v'}{1 - g\dfrac{v'u}{c^2}} \\[2ex] u = u' \ominus v' = \dfrac{u' - v'}{1 + s\dfrac{v'}{c} + g\dfrac{v'u'}{c^2}} \end{cases}$$

# Gamma Function Formulas for the Test Particle Moving by Arbitrary Velocity

- *Armenian gamma function formula with respect to the inertial system* $K$

$$\boxed{\gamma_{\text{չ}}(u) \; = \; \frac{1}{\sqrt{1 + s\dfrac{u}{c} + g\dfrac{u^2}{c^2}}}}$$

I_11

- *Armenian gamma function formula with respect to the inertial system* $K'$

$$\boxed{\gamma_{\text{չ}}(u') \; = \; \frac{1}{\sqrt{1 + s\dfrac{u'}{c} + g\dfrac{u'^2}{c^2}}}}$$

I_12

# Moving Test Particle Gamma Functions Transformations

- *First form of the gamma functions transformation formulas*

I_13

$$\begin{cases} \gamma_{\text{ձ}}(u) & = & \gamma_{\text{ձ}}(v)\gamma_{\text{ձ}}(u')\left(1 - g\dfrac{vu'}{c^2}\right) \\ \gamma_{\text{ձ}}(u') & = & \gamma_{\text{ձ}}(v')\gamma_{\text{ձ}}(u)\left(1 - g\dfrac{v'u}{c^2}\right) \end{cases}$$

- *Second form of the gamma functions transformation formulas*

I_14

$$\begin{cases} \gamma_{\text{ձ}}(u) & = & \gamma_{\text{ձ}}(v')\gamma_{\text{ձ}}(u')\left(1 + s\dfrac{v'}{c} + g\dfrac{v'u'}{c^2}\right) \\ \gamma_{\text{ձ}}(u') & = & \gamma_{\text{ձ}}(v)\gamma_{\text{ձ}}(u)\left(1 + s\dfrac{v}{c} + g\dfrac{vu}{c^2}\right) \end{cases}$$

# Few More Relations Between Armenian Gamma Functions

- *Test particle gamma functions relation formulas*

$$\begin{cases} \dfrac{\gamma_{\xi}(u)}{\gamma_{\xi}(u')} = \gamma_{\xi}(v)\left(1-g\dfrac{vu'}{c^2}\right) = \gamma_{\xi}(v')\left(1+s\dfrac{v'}{c}+g\dfrac{v'u'}{c^2}\right) \\ \dfrac{\gamma_{\xi}(u')}{\gamma_{\xi}(u)} = \gamma_{\xi}(v')\left(1-g\dfrac{v'u}{c^2}\right) = \gamma_{\xi}(v)\left(1+s\dfrac{v}{c}+g\dfrac{vu}{c^2}\right) \end{cases} \tag{I\_15}$$

- *From (I_15) we get also this interesting relations*

$$\begin{cases} \sqrt{1+s\dfrac{v}{c}+g\dfrac{v^2}{c^2}}\sqrt{1+s\dfrac{v'}{c}+g\dfrac{v'^2}{c^2}} = \left(1+s\dfrac{v}{c}+g\dfrac{vu}{c^2}\right)\left(1+s\dfrac{v'}{c}+g\dfrac{v'u'}{c^2}\right) \\ \sqrt{1+s\dfrac{v}{c}+g\dfrac{v^2}{c^2}}\sqrt{1+s\dfrac{v'}{c}+g\dfrac{v'^2}{c^2}} = \left(1-g\dfrac{vu'}{c^2}\right)\left(1-g\dfrac{v'u}{c^2}\right) \end{cases} \tag{I\_16}$$

# Invariant Relation For Time Differentials

- *Time differentials invariant relation for observed test particle*

I_17

$$\begin{cases} \dfrac{dt}{dt'} = \dfrac{\gamma_{\text{չ}}(u)}{\gamma_{\text{չ}}(u')} \\[2ex] \dfrac{dt'}{dt} = \dfrac{\gamma_{\text{չ}}(u')}{\gamma_{\text{չ}}(u)} \end{cases} \Rightarrow \quad \frac{dt}{\gamma_{\text{չ}}(u)} = \frac{dt'}{\gamma_{\text{չ}}(u')} = d\tau$$

- *Time differentials new relations for two special cases*

I_18

$$\begin{cases} u' = 0 \\ u = 0 \end{cases} \Rightarrow \quad \begin{cases} \dfrac{dt}{dt'} = \gamma_{\text{չ}}(v) \\[2ex] \dfrac{dt'}{dt} = \gamma_{\text{չ}}(v') \end{cases}$$

# Moving Test Particle Acceleration Formulas

- *Test particle accelerations transformation formulas*

$$
\begin{cases}
b' = \dfrac{1}{\gamma_{\text{չ}}^{3}(v)\left(1+s\dfrac{v}{c}+g\dfrac{vu}{c^{2}}\right)^{3}}\,b = \dfrac{1}{\gamma_{\text{չ}}^{3}(v')\left(1-g\dfrac{v'u}{c^{2}}\right)^{3}}\,b \\[2ex]
b = \dfrac{1}{\gamma_{\text{չ}}^{3}(v)\left(1-g\dfrac{vu'}{c^{2}}\right)^{3}}\,b' = \dfrac{1}{\gamma_{\text{չ}}^{3}(v')\left(1+s\dfrac{v'}{c}+g\dfrac{v'u'}{c^{2}}\right)^{3}}\,b'
\end{cases}
\qquad \text{I\_19}
$$

- *Definition of the invariant Armenian acceleration for observed test particle*

$$
\boxed{b_{\text{չ}} = \gamma_{\text{չ}}^{3}(u)\,b = \gamma_{\text{չ}}^{3}(u')\,b' = \text{invariant}}
\qquad \text{I\_20}
$$

# Chapter J

## Foundation of the Armenian Dynamics

# Armenian Lagrangians of Material Test Particle Moving Free or Under Conservative Forces

- *Armenian Lagrangian of the free moving material particle*

$$\mathcal{L}_{\text{ꆹ}}(u) = -m_0 c^2 \sqrt{1 + s\frac{u}{c} + g\frac{u^2}{c^2}}$$

J_01

- *Armenian Lagrangian of the material particle moving in conservative field*

$$\mathcal{L}_{\text{ꆹ}}(u,x) = -m_0 c^2 \sqrt{1 + s\frac{u}{c} + g\frac{u^2}{c^2}} - U(x)$$

J_02

*Where $m_0$ is rest mass of the material test particle.*

# Armenian Energy and Armenian Momentum Formulas

- *Armenian energy formula*

J_03

$$E_{չ}(u,x) = \frac{1 + \frac{1}{2}s\frac{u}{c}}{\sqrt{1 + s\frac{u}{c} + g\frac{u^2}{c^2}}} m_0 c^2 + U(x)$$

- *Armenian momentum formula*

J_04

$$P_{չ}(u) = -\frac{\frac{1}{2}s + g\frac{u}{c}}{\sqrt{1 + s\frac{u}{c} + g\frac{u^2}{c^2}}} m_0 c$$

## Approximation of the Armenian Energy and Momentum Formulas

- *Definition of the Armenian rest mass*

$$m_{\text{չ}0} \;=\; -\left(g - \tfrac{1}{4}s^2\right)m_0 \;\gtrless\; 0 \tag{J_05}$$

- *First approximation of Armenian energy and Armenian momentum*

$$\begin{cases} E_{\text{չ}}(u,x) \approx m_0c^2 + \frac{1}{2}m_{\text{չ}0}u^2 + U(x) \\ P_{\text{չ}}(u) \approx -\frac{1}{2}sm_0c + m_{\text{չ}0}u \end{cases} \tag{J_06}$$

# Armenian Energy and Momentum Formulas for Rest Particle

- *Armenian energy and Armenian momentum values for rest particle*

J_07

$$\boxed{\begin{cases} E_{\text{չ}}(0,x) & = & m_0 c^2 + U(x) \\ P_{\text{չ}}(0) & = & -\frac{1}{2} s m_0 c \end{cases}}$$

- *Armenian formula for infinite free energy – hope for human species*

J_08

$$\boxed{P_{\text{չ}}(0) \;=\; -\frac{1}{2} s m_0 c}$$

# Armenian Energy and Armenian Momentum Formulas Observed From Inertial Systems $K$ and $K'$

- *Armenian energy and momentum formulas with respect to inertial system* $K$

$$\begin{cases} E_{\text{չ}} \equiv E_{\text{չ}}(u,x) = \gamma_{\text{չ}}(u)\left(1+\frac{1}{2}s\frac{u}{c}\right)m_0c^2+U(x) \\ P_{\text{չ}} \equiv P_{\text{չ}}(u) = -\gamma_{\text{չ}}(u)\left(\frac{1}{2}s+g\frac{u}{c}\right)m_0c \end{cases}$$

J_09

- *Armenian energy and momentum formulas with respect to inertial system* $K'$

$$\begin{cases} E'_{\text{չ}} \equiv E_{\text{չ}}(u',x') = \gamma_{\text{չ}}(u')\left(1+\frac{1}{2}s\frac{u'}{c}\right)m_0c^2+U(x') \\ P'_{\text{չ}} \equiv P_{\text{չ}}(u') = -\gamma_{\text{չ}}(u')\left(\frac{1}{2}s+g\frac{u'}{c}\right)m_0c \end{cases}$$

J_10

# Free Particle's Armenian Energy and Armenian Momentum Direct and Inverse Transformation Equations

- *Armenian energy and momentum direct transformation equations*

J_11

$$\begin{cases} E'_{\xi} = \gamma_{\xi}(v)\left(E_{\xi} - vP_{\xi}\right) \\ P'_{\xi} = \gamma_{\xi}(v)\left[\left(1 + s\dfrac{v}{c}\right)P_{\xi} + g\dfrac{v}{c^2}E_{\xi}\right] \end{cases}$$

- *Armenian energy and momentum inverse transformation equations*

J_12

$$\begin{cases} E_{\xi} = \gamma_{\xi}(v')\left(E'_{\xi} - v'P'_{\xi}\right) \\ P_{\xi} = \gamma_{\xi}(v')\left[\left(1 + s\dfrac{v'}{c}\right)P'_{\xi} + g\dfrac{v'}{c^2}E'_{\xi}\right] \end{cases}$$

# Reciprocal Observation of the Identical Material Particles Resting in Both Inertial Systems

- *Armenian energy and momentum of the particle resting in the system* $K'$

$$
\begin{cases}
E_{\text{չ}}(v) = \gamma_{\text{չ}}(v)\left(1+\frac{1}{2}s\frac{v}{c}\right)m_0c^2 \\
P_{\text{չ}}(v) = -\gamma_{\text{չ}}(v)\left(\frac{1}{2}s+g\frac{v}{c}\right)m_0c
\end{cases}
$$

J_13

- *Armenian energy and momentum of the particle resting in the system* $K$

$$
\begin{cases}
E_{\text{չ}}(v') = \gamma_{\text{չ}}(v')\left(1+\frac{1}{2}s\frac{v'}{c}\right)m_0c^2 \\
P_{\text{չ}}(v') = -\gamma_{\text{չ}}(v')\left(\frac{1}{2}s+g\frac{v'}{c}\right)m_0c
\end{cases}
$$

J_14

# Very Important Formulas

- *Relations between Armenian energy and Armenian momentum quantities for reciprocal observed identical material particles*

J_15

$$\boxed{\begin{cases} E_{\zeta}(v') = E_{\zeta}(v) \\ P_{\zeta}(v') + P_{\zeta}(v) = -sE_{\zeta}(v) \end{cases}}$$

- *Armenian full energy formulas for free moving particle*

J_16

$$\boxed{\begin{cases} \left(g\frac{1}{c}E_{\zeta}\right)^2 + s\left(g\frac{1}{c}E_{\zeta}\right)P_{\zeta} + gP_{\zeta}^2 = g\left(g-\frac{1}{4}s^2\right)(m_0c)^2 \gtrless 0 \\ \left(g\frac{1}{c}E'_{\zeta}\right)^2 + s\left(g\frac{1}{c}E'_{\zeta}\right)P'_{\zeta} + gP'^2_{\zeta} = g\left(g-\frac{1}{4}s^2\right)(m_0c)^2 \gtrless 0 \end{cases}}$$

# Force Acting on Material Particle Moving in Conservative Field

- *Armenian force formulas*

$$\begin{cases} F_{\zeta} = \dfrac{dP_{\zeta}}{dt} = -\left(g - \frac{1}{4}s^2\right) m_0 \gamma_{\zeta}^{3}(u)\, b \\[2ex] F'_{\zeta} = \dfrac{dP'_{\zeta}}{dt'} = -\left(g - \frac{1}{4}s^2\right) m_0 \gamma_{\zeta}^{3}(u')\, b' \end{cases}$$

J_17

- *Armenian interpretation of Newton's second law*

$$\begin{cases} F_{\zeta} = m_{\zeta 0}\, b_{\zeta} \\ F'_{\zeta} = m_{\zeta 0}\, b_{\zeta} \end{cases} \Rightarrow \quad F'_{\zeta} = F_{\zeta}$$

J_18

# Conclusions

We showed that the «Armenian Theory of Special Relativity» is full of fine and difficult ideas to understand, which in many cases seems to conflict with our everyday experiences and legacy conceptions. This new crash course book is the simplified version for broad audiences. This book is not just generalizing transformation equations and all relativistic formulas; It is also without limitations and uses a pure mathematical approach to bring forth new revolutionary ideas in the theory of relativity. It also paves the way to build general theory of relativity and finally for the construction of the unified field theory – the ultimate dream of every truth seeking physicist.

Armenian Theory of Relativity is such a mathematically solid and perfect theory that it cannot be wrong. Therefore, our derived transformation equations and all relativistic formulas have the potential to not just replace legacy relativity formulas, but also rewrite all modern physics. Lorentz transformation equations and other relativistic formulas is a very special case of the Armenian Theory of Relativity when we put $s = 0$ and $g = -1$.

The proofs in this book are very brief, therefore with just a little effort, the readers themselves can prove all the provided formulas in detail. You can find the more detailed proofs of the formulas in our main research book «Armenian Theory of Special Relativity», published in Armenia of June 2013.

In this visual book, you will set your eyes on many new and beautiful formulas which the world has never seen before, especially the crown jewel of the Armenian Theory of Relativity - Armenian energy and Armenian momentum formulas, which can change the future of the human species and bring forth the new golden age.

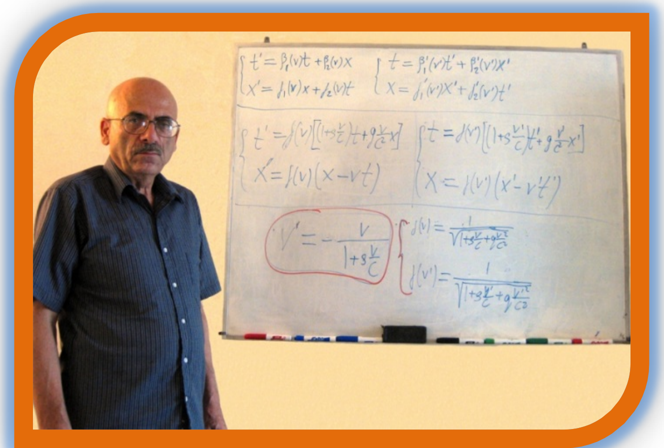
The time has come to reincarnate the ether as a universal reference medium which does not contradict relativity theory. Our new theory explains all these facts and peacefully brings together followers of absolute ether theory, relativistic ether theory and dark energy theory. We just need to mention that the absolute ether medium has a very complex geometric character, which has never been seen before.

# Our Published Articles and Books

- "Armenian Transformation Equations In 3D (Very Special Case)" , 16 pages, February 2007, USA
- "Armenian Theory of Special Relativity in One Dimension", Book, 96 pages, **Uniprint**, June 2013, Armenia (*in Armenian*)
- "Armenian Theory of Special Relativity Letter", **IJRSTP**, Volume 1, Issue 1, April 2014, Bangladesh
- "Armenian Theory of Special Relativity Letter", 4 pages, **Infinite Energy**, Volume 20, Issue 115, May 2014, USA
- "Armenian Theory of Special Relativity Illustrated", **IJRSTP**, Volume 1, Issue 2, November 2014, Bangladesh
- "Armenian Theory of Relativity Articles (Between Years 2007 - 2014)", Book, 42 pages, **LAMBERT Academic Publishing**, February 2016, Germany
- "Armenian Theory of Special Relativity Illustrated", 11 pages, **Infinite Energy**, Volume 21, Issue 126, March 2016, USA
- "Time and Space Reversal Problems in the Armenian Theory of Asymmetric Relativity", 17 pages, **Infinite Energy**, Volume 22, Issue 127, May 2016, USA
- "Foundation Armenian Theory of Special Relativity In One Physical Dimension By Pictures", Book, 76 pages, August 2016, **print partner**, Armenia (*in Armenian*)


First Armenian publication – June 2013, Armenia, ISBN: 978-1-4675-6080-1
Illustrated Armenian Publication – August 2016, Armenia, ISBN: 978-9939-0-1981-9
Illustrated English Publication – September 2016, Armenia, ISBN: 978-9939-0-1982-6

# Authors Short Biographies



Robert Nazaryan, a grandson of surviving victims of the Armenian Genocide (1915 - 1921), was born on August 7, 1948 in Yerevan, the capital of Armenia. As a senior in high school he won first prize in the national mathematics Olympiad of Armenia in 1966. Then he attended the Physics department at Yerevan State University from 1966 - 1971 and received his MS in Theoretical Physics. 1971 - 1973 he attended Theological Seminary at Etchmiadzin, Armenia and received Bachelor of Theology degree. For seven years (1978 - 1984) he was imprisoned as a political prisoner in the USSR for fighting for the self-determination of Armenia. He has many ideas and unpublished articles in theoretical physics that are waiting his time to be revealed. Right now he is working to finish "Armenian Theory of Relativity in 3 Physical Dimensions".
He has three sons, one daughter and six grandchildren.

Hayk Nazaryan was born on May 12, 1989 in Los Angeles, California. He attended Glendale community College from 2009 - 2011, then he transferred to California State University Northridge and got his Master of Science degree in physics 2015. He is now teaching as an adjunct instructor at Glendale Community College.